CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 86-63
WASTE DISCHARGE REQUIREMENTS

NATIONAL SEMICONDUCTOR CORPORATION
SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. National Semiconductor Corporation (hereinafter called the discharger) manufactures integrated circuits at a facility located on 2900 Semiconductor Drive, Santa Clara. The discharger has occupied this site since the 1970.

2. Subsurface investigations initiated in early 1982 revealed significant levels of organic chemical pollution in both soil and groundwater beneath the site and extending beyond the site boundary. Chemicals identified included Trichloroethylene (TCE), Trans-1,2-dichloroethylene, Trichloroethane (TCA), Xylene, Ethylbenzene, Acetone and Alcohols. The contamination was apparently caused by leaks in underground waste solvent piping systems, and by spills in transportation and loading and unloading of solvents.

3. The discharger and adjacent property owners and facility operators have undertaken investigations to define the extent of pollution. As of May 1986, the pollutant plume extends horizontally a distance of over 1,000 feet from the onsite pollution source and vertically to a depth of more than 45 feet.

4. As of May 1986, remedial measures taken include installation of onsite groundwater extraction wells, and removal of underground tanks and sumps. The discharger has obtained all necessary emission permits to operate the onsite air stripping system to treat the contaminated groundwater.

5. The groundwater pollution from the facility is of particular concern because of the high toxicity and high concentrations of chemicals and because of the potential for the continued migration of pollutants to usable groundwaters.

6. Further investigation and interim remedial action are necessary to prevent the continued migration of pollutants to unaffected groundwaters and to preclude loss of existing

and potential beneficial uses of said waters. The Board intends to establish final cleanup objectives for the site after review of the results of actions required by this order.

7. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for groundwater.

8. The existing and potential beneficial uses of the groundwater underlying and contiguous to the facility include:

   a. Municipal Water Supply
   b. Domestic Water Supply
   c. Agricultural Water Supply
   d. Industrial Service and Process Water Supply

9. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharger requirements and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

10. This project constitutes a minor modification to land and such activity is thereby exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15304 of the Resources Agency Guidelines.

11. The Board, in public meeting, heard and considered all comments pertaining to the discharger.

IT IS HEREBY ORDERED, that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS:

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect beneficial uses of the groundwaters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants or adversely spread any pollutants from other sites is prohibited.

B. SPECIFICATIONS:

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharger shall conduct activities as needed to define the local hydrogeological conditions, and the lateral and vertical extent of the soil and groundwater pollution in and contiguous to the zone of known pollution. Should monitoring results show evidence of plume migration, additional plume characterization shall be required.

C. PROVISIONS

1. The discharger shall submit to the Board technical reports on self-monitoring work performed according to a program approved by the Executive Officer.

2. In order to comply with Specification B.2., the discharger shall comply with the following task and time schedule:

TASK	COMPLIANCE DATE
a. Submit a technical report on the results of a survey conducted to identify all active and abandoned wells within one mile radius of the site and to determine their potential to act as conduits for interaquifer cross contamination. The report should contain recommendations for further investigation of any potential conduits and/or analyzing options for closure, with priority given to conduits located with the defined extent of pollution.	December 1, 1986

3. With respect to the offsite portion of the pollutant plume, the discharger shall comply with the above Prohibitions and Specification B.2 according to the following task and time schedule:

	COMPLIANCE DATE
a. Submit initial technical report which describes the work completed towards defining the lateral and vertical extent of the offsite plume.	September 19, 1986
b. Submit second technical report documenting progress toward completing offsite plume definition.	December 19, 1986
c. Submit final technical report to document the lateral and vertical extent of the offsite groundwater pollutant plume. This report should include a description of offsite geohydrology and an assessment of the influence, if any, the various pumping wells in the area identified in reports submitted pursuant to Provision 2A above may have on the groundwater gradients in each polluted aquifer zone. In addition, the report should contain a detailed proposal for offsite interim remedial measures to contain and cleanup the pollutant plume. The proposal shall include a completed application to discharge to surface waters, if such discharge is an element of the proposal.	March 15, 1987
d. Submit technical report documenting completion of the installation of extraction wells, or other necessary hydraulic control structures, to contain and cleanup the pollutant plume.	June 15, 1987
e. Complete the installation of treatment facilities, as necessary, capable of reducing concentrations of organic pollutants in extracted groundwater to acceptable levels prior to discharge to waters of the State.	July 1, 1987
f. Commence operation of containment and cleanup facilities.	August 1, 1987
g. Submit a technical report which documents compliance with Provision 3.e and 3.f.	August 15, 1987

h. Submit a technical report which evaluates the effectiveness of the extraction system, and/or other hydraulic control structures, necessary to control and clean up the polluted groundwaters. November 1, 1987

The report shall demonstrate the adequacy of the system to contain the pollutant plume and to achieve the efficient removal of pollutants from the subsurface environment. Such an evaluation shall include, but need not be limited to, an estimation of the flow capture zones of the wells, establishment of the cones of depression by field measurements, and presentation of monitoring data from adjacent and downgradient monitoring wells.

4. Reports submitted to define extent of pollution shall include groundwater gradient contour maps, pollution concentration contour maps, and cross-sectional geologic maps and discussion of lateral continuity of various aquifers.

5. The discharger shall submit detailed monthly reports on its progress toward compliance with the Provisions specified in this Order, including specific actions taken and actions proposed prior to the next report.

6. All samples shall be analyzed by state certified laboratories using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

7. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:

   a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept.

   b. Access to copy any records required to be kept under terms and conditions of this Order.

   c. Inspection of any monitoring equipment or methods required by this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible as part of any investigation or remedial action program, to the discharger.

8. The discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

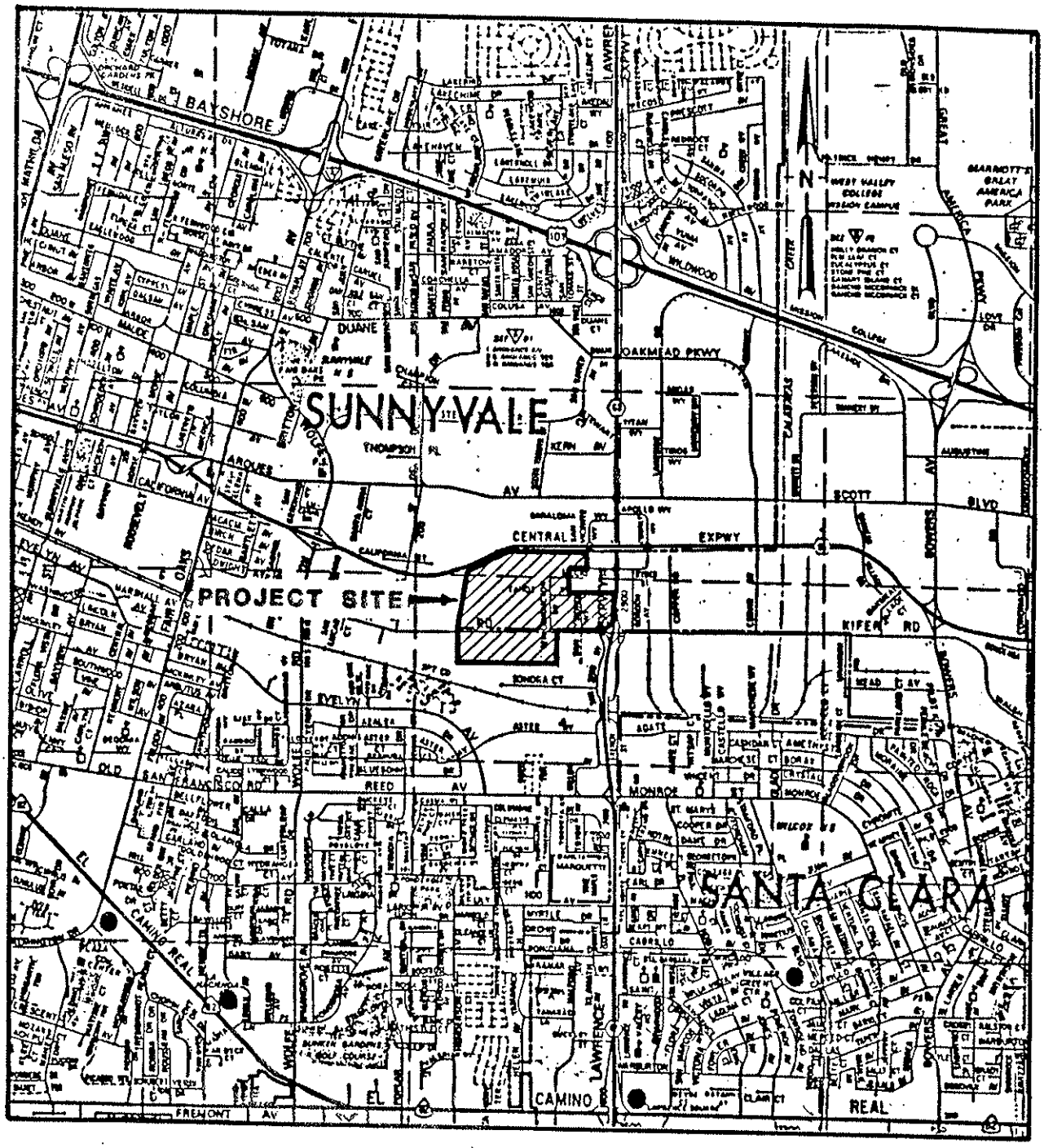
9. Copies of all correspondence, work plans and technical reports pertaining the interim remedial investigation and remedy selection shall be supplied to City of Sunnyvale, City of Santa Clara, Santa Clara County, Santa Clara Valley Water District and EPA.

10. The Board will review this order periodically and may revise the requirements when necessary.

I, Roger James, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 20, 1986.

ROGER B. JAMES
Executive Officer

Attachment: Site Map



Appendix D

Scale : 0 — 1 — 2 miles

LOCATION MAP: National Semiconductor Corporation

2900 Semiconductor Drive, Santa Clara, Santa Clara County

RWQCB- May, 1986